



Installation and Operation Manual



Wireless Digital Clock/Elapsed Time Indicator with Code Blue



WARNING: Hazardous voltage in electrical equipment can cause severe personal injury or death. Inspection, installation, and preventive maintenance should only be performed on equipment to which power has been turned off, disconnected and electrically isolated so no accidental contact can be made with energized parts.

Electrostatic Sensitive Devices

CAUTION: This equipment contains electronic devices that are sensitive to static electric charges. To guarantee protection for the circuitry of this unit, it is required that electrostatic handling precautions be observed when installing or repairing this equipment. Any technician or other personnel working on this unit must wear a static grounding wrist strap or similar device to provide protection of sensitive components.



Important Installation and Warranty Information	4
Specifications	5
Description	6
SQA461RSxE Digital Clock/Timer	6
ATSTCS Control Station	7
Installation Instructions	8
SQA461RSxE Installation Instructions.....	8
ATSTCS Installation Instructions	9
Operation	10
Power Up	10
Setting Time	10
Setting the Up Counter Preset Time	10
Up Counter Elapsed Time Operation.....	11
Setting the Down Counter Preset Time	11
Down Counter Elapsed Time Operation.....	11
Code Blue	12
Operation	12
Wiring	12
Important Considerations	13
Maintenance	14
Appendix 1: Operators Flowchart.....	15

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american-time.com

IMPORTANT INSTALLATION AND WARRANTY INFORMATION

WARRANTY INFORMATION: American Time (the Manufacturer) provides a limited warranty to the Original Purchaser of this product. The Original Purchaser is the party to whom the Manufacturer issued its Sales Order, generally the Manufacturer's distributor. In order to preserve this warranty, it is important that only persons who have been properly trained and authorized by the Manufacturer service the product.

Other parties involved in the installation of this product may have also provided a warranty, which may be different than that of the Manufacturer. The Manufacturer will only be responsible to the Original Purchaser and only for the Manufacturer's own warranty. For further information regarding the Manufacturer's warranty, contact the Original Purchaser.

OWNER'S MANUAL: The owner's manual does not purport to cover all the details or variations in the equipment described, nor does it provide for every possible contingency to be met in connection with installation, operation and maintenance. All specifications subject to change without notice. Should further information be desired or should particular problems arise which are not covered sufficiently, the matter should be referred to the Installer or Original Purchaser listed below.

INSTALLER INFORMATION

COMPANY: _____ INSTALLER: _____ PHONE: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

DATE INSTALLED: _____ INSTALLER'S SIGNATURE: _____

ORIGINAL PURCHASER INFORMATION

COMPANY: _____ PHONE: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PURCHASER'S PURCHASE ORDER NO: _____

DATE PURCHASED: _____

ATS SALES ORDER ACKNOWLEDGMENT NO.: _____

ORIGINAL PURCHASER'S SIGNATURE: _____

NOTE: A copy of the above-completed information may be required by the Manufacturer for authorization of Warranty services.

GENERAL

Weight:	Digital Clock/Timer	8.80 lb.
ATSTCS Control Station	0.27 lb.
External Dimensions:	Digital Clock/Timer	6.1"h x 24"w x 3.5"deep
ATSTCS Control Station	4.63"h X 4.56"w X 1.25"deep

SPECIFICATIONS**ELECTRICAL****Power Requirements** (Digital Clock/Timer only):

Line Voltage:	120vac 50/60Hz -SQA461RSAE and SQA461RSPE
	24vac 50/60Hz - SQA461RSBE
	220vac 50/60Hz - SQA461RSKE

Note: Voltage is set at factory. See above part number suffix for reference.

Battery:..... 9vdc Rechargeable Ni-Cad Battery**Battery Charger:** 9vdc Direct Current source with
current limiting resistor.**Maximum Current** (Digital Clock/Timer only): 120vac - 130mA (max), 101mA (avg)**Memory Retention on Loss of Line Voltage:** 4 hours with fully charged battery**Distance of ATSTCS from Digital Clock/Timer:**..... 30-ft maximum with 22 AWG stranded wire
with minimum 1/32" thick insulation**Clock Circuits:** 3.0mA. max. @ 24vac/120vac**Code Blue Circuits:** 3.0mA. max. @ 12vac/vdc-30vac/vdc**ENVIRONMENTAL****Ambient Operating Range:** 10°C to 49°C (50°F to 120°F)**Recommended Storage Temperature:** -30°C to 45°C (-22°F to 113°F)
for six months maximum**Humidity:**..... 85 %RH at 30°C (86°F)**OPERATION****Modes Available:**..... 12 hour or 24-hour wireless synchronized
Incrementing timer with programmable preset value and start/stop capability
Decrementing timer with programmable preset value and start/stop capability
Code Blue incrementing timer**Accuracy:** ±1 second to SiteSync IQ system controller**Indications:** Digital Clock/Timer hours and minutes - 4", bright red, seven segment LED's
hours and minutes are separated by a colon
seconds - 2", bright red, seven segment LED's

.....ATSTCS Control Station 2 second audible alarm

Reception: Colons flash

Description

The SQA461RSxE is a six-digit digital multi-function synchronized clock/timer which can be used as an up or down counting elapsed timer with an optional Code Blue trigger. The elapsed timers can be started, stopped, resumed, and reset. Both timer modes have a programmable preset value. When the timer reaches the preset value, a two-second audible alarm sounds from the ATSTCS control panel. The Code Blue up counting elapsed timer will override all other modes of operation if used. The SQA461RSxE can function as a 12-hour or 24 hour clock which is synchronized by the SiteSync IQ wireless clock system.

Installation

Operation

Code Blue

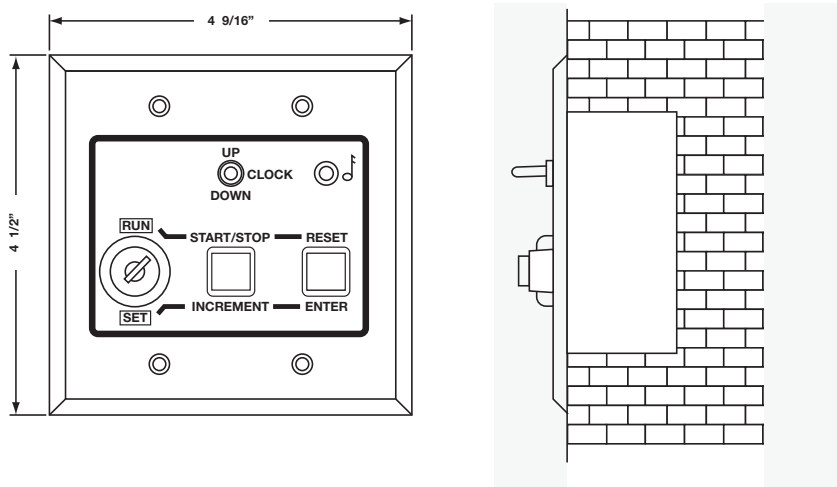
Maintenance

Appendix

Digital Clock/Timer



ATSTCS Control Station



**Run/Set Switch -**

Set Position: This position is used to set a preset up or down counting time (Timer). It is also used to reset the Code Blue timer.

This position is not used for setting time. The controller will allow you to enter in a 12/24 hour mode and set a time. However, the time will be controlled and updated by the SiteSync IQ system controller.

Run Position: This position is used to permit Clock/Timer to operate.

Up/Clock/Down Switch -

Up Position: This position is used to choose up counting elapsed timer mode.

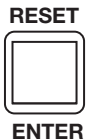
Clock Position: This position is used to choose clock mode.

Down Position: This position is used to choose down counting elapsed timer mode.

Start/Stop/Increment Switch -

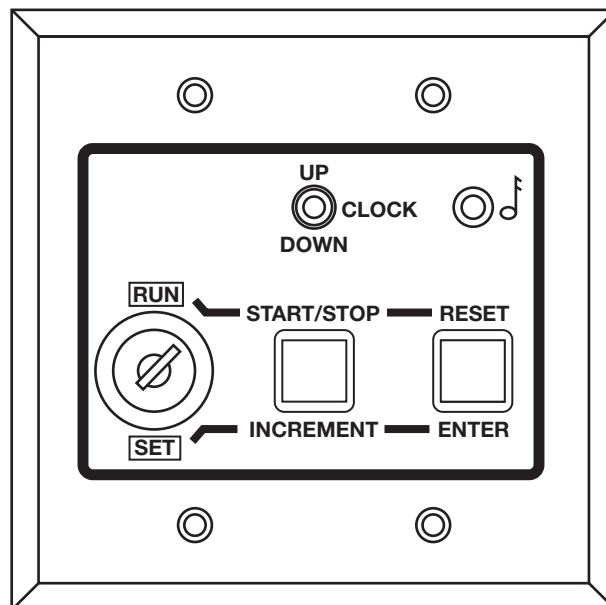
This button is used to start, stop, and resume timer count, when Run/Set Switch is in the Run position (Code Blue timer can only be stopped).

This button is also used to increment/advance the number value being set when the Run/Set Switch is in Set position.

Reset/Enter Switch -

This button is used to return a timer (excluding the Code Blue timer) to the beginning of its count, when the Run/Set Switch is in Run position.

This button can also be used to select a field (i.e. format, minute digits, hour digits) when the Run/Set Switch is in Set position.



The Digital Clock/Timer can be mounted to a single or double gang box. To install the Digital Clock/Timer, follow the instructions below. Ensure that installation conforms to the National Electrical Code and local wiring codes.

CAUTION: Electric Shock Hazard! Ensure that **NO** electrical power is present on any wire before installation.

Description

Installation

Operation

Code Blue

Maintenance

Appendix

❶ Remove the 6-32 black screw on the top of the clock which secures the back mounting plate. Mount the back plate to a single or double gang box. See Figure 2 on page 9.

❷ Make electrical connections (hot, neutral, ground) to non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections, corners and internal components. For Molex, connect white to neutral/common, black to positive/hot, green to ground and red to optional correction line if using a wired master.

Note: Voltage is set at the factory. See part number suffix reference.

120vac 50/60 Hz (SQA461RSAE and SQA461RSPE)

24vac 50/60 Hz (SQA461RSBE)

220vac 50/60Hz (SQA461RSKE)

❸ Pull the ten wires from the clock to the control station. Keep these ten wires separate from the high voltage wires. See Figure 1 on page 9. **Note:** there are two wires (white and green) in the bundle that are not used.

❹ Join the two Molex connectors together, placing excess wiring and Molex connectors into the gang box.

❺ Slide the clock onto the metal mounting bracket installed in Step 1 and reinsert 6-32 screw from the top of the clock into the mounting bracket hole. See Figure 2 on page 9.

❻ Connect field wiring interconnecting the Clock/Timer with the ATSTCS Control Station to the appropriate terminals of the Digital Clock/Timer See wiring detail on next page.

Chassis ground **MUST** be connected to conduit/Earth ground to provide proper protection from electric shock.

CAUTION: Electric Shock Hazard! When making installation, route field wiring away from sharp projections, corners, and internal components.

❼ Make sure the SiteSync IQ system controller and other equipment is set up and operational. Note: Clocks should be installed within 24 hours of installing the system controller. After 24 hours, the system controller will enter Quiet Mode. If your system controller has a keypad, pressing 3-5-7 will disable Quiet Mode for 6 hours

❽ Apply power to the circuit and confirm correct operation.

❾ Upon startup, the clock will flash the version number and then correct on the first valid signal. This should take less than one minute. If the clock is not updating, review the steps listed above and consult the SiteSync IQ Installation and Operation Manual for additional troubleshooting assistance.

The ATSTCS Control Station can be mounted to a double gang box, 1½ inch deep or deeper. The Control Station can be mounted up to 30 feet away from the Digital Clock/Timer. The recommended minimum interconnecting field wire size is #22.8 AWG stranded wire. **Ensure that installation conforms to the National Electrical Code and local wiring codes.**

CAUTION: Electric Shock Hazard! Ensure that no electrical power is present on any wire before installation.

- ❶ Pull interconnecting field wires into the double gang box.
- ❷ Connect field wiring interconnecting the ATSTCS Control Station with the Digital Clock/Timer to the appropriate wires of the Control Station. See wiring detail below.
- ❸ Mount the Control Station to the double gang box using the machine screws provided.

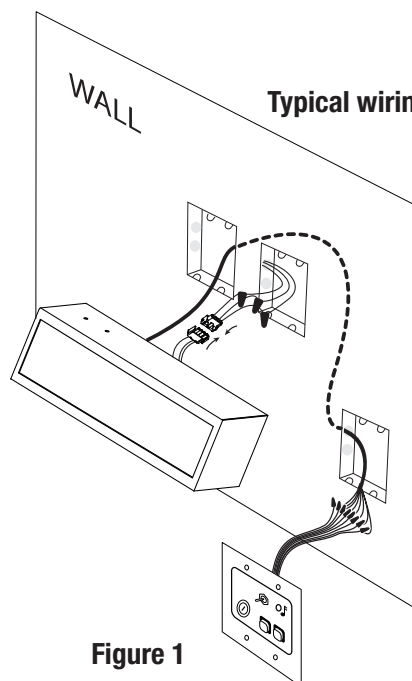
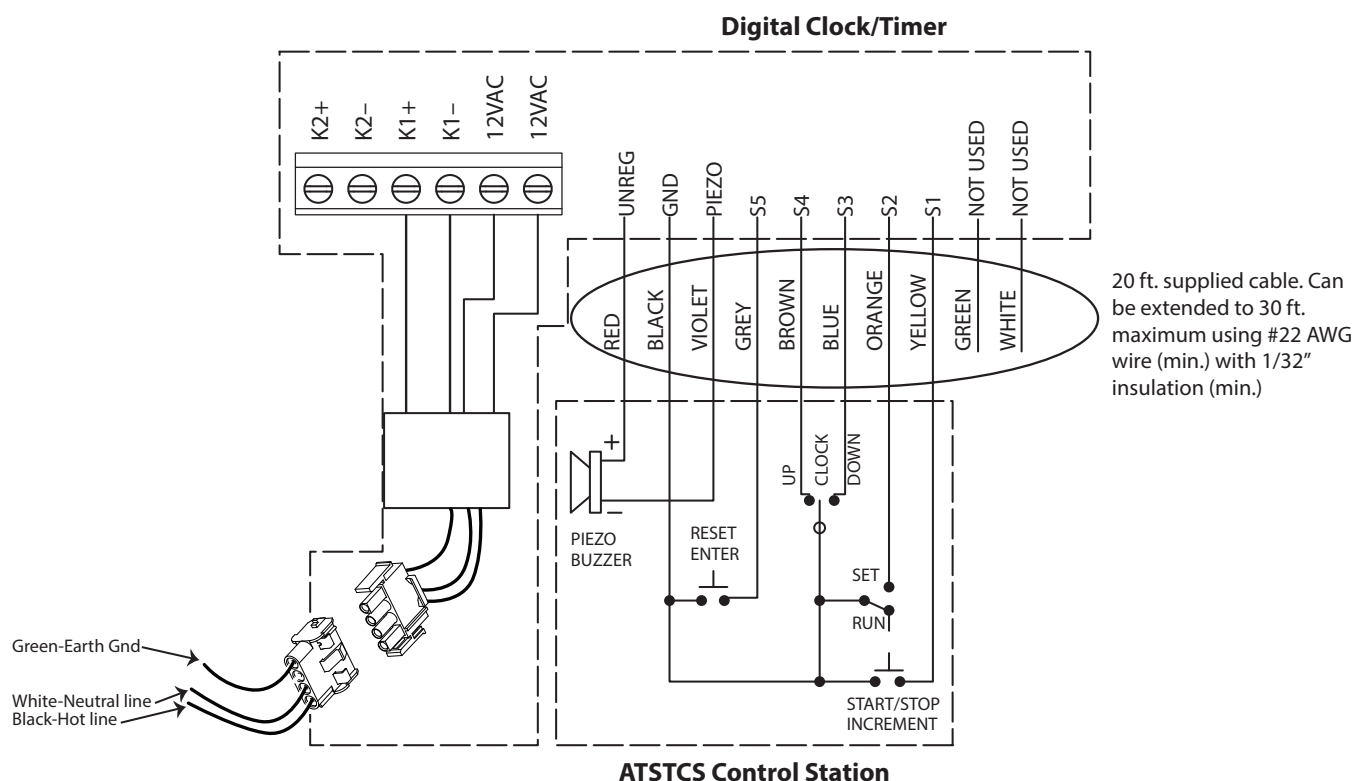
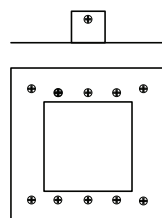


Figure 1

Typical wiring for the Digital Clock/Timer with Control Station



Mounting plate detail

6-32 x ¾ black screw
secures device to the
mounting plate

Mounting plate
fastens to the
back box

Single or double gang
box (supplied by others)
must be securely mounted

Figure 2

Powering Up

Before applying power, place the SET/RUN switch to the RUN position and the UP/DOWN/CLOCK switch to the CLOCK position.

Apply power to the unit. The displays may rotate during the power on self test and then a version number will appear for a few seconds. Once the receiver inside the clock receives a signal from the SiteSync IQ system controller, the clock will display and begin keeping time. At first startup the clock may display a time such as 1:00:00 until it receives the first time update from the SiteSync IQ system controller. This should only take a few seconds, after which the correct time from the SiteSync IQ system controller should appear.

Setting Time

Setting of the time is not needed for the digital clock or timer control station. The time information is automatically updated by the SiteSync IQ system controller. The 12- or 24-hour mode option is configured by the display settings of the system controller.

The ATSTCS timer control station will allow the user to set a 12- or 24-hour mode and time when the SET/RUN switch is in the SET position. However, as soon as the SiteSync IQ system controller updates the 12/24 hour mode chosen, the time will be reset to the time sent by the SiteSync IQ system controller and the 12/24 hour mode configured in the system controller. Set the SET/RUN switch to the RUN position and the UP/DOWN/CLOCK switch to the CLOCK position to return the clock display.

Setting the Up Counter Preset Time

If you want to use the alarm and hold feature with the UP timer, you will need to set a preset time for the UP timer.

Set the UP/DOWN/CLOCK switch to the UP position.

Set the SET/RUN switch to the SET position. The hours digits will be flashing.

Using the INCREMENT switch, set the desired hours for the preset time, then press ENTER. The minutes digits will now be flashing.

Set the desired minutes the same way, then press ENTER. The seconds digits will then be flashing.

Set the desired seconds the same way, then press ENTER. The display will then flash **donE**.

Set the SET/RUN switch back to the RUN position.

Note: A preset of 00:00:00 allows the digital clock/timer to be used as a standard elapsed timer with a maximum elapsed time of 30:59:59.

Up Counter Elapsed Time Operation

Once the desired preset value has been set, the unit is now ready to function as an UP count elapsed timer.

- ❶ Be sure the SET/RUN switch is in the RUN position.
- ❷ Set the UP/DOWN/CLOCK switch to the UP position.
- ❸ Press RESET to display **00:00:00**.
- ❹ Press the START/STOP switch to begin counting elapsed time.
- ❺ Press the START/STOP switch again to stop and hold the count.
- ❻ Press the START/STOP switch again to resume elapsed time counting.
- ❼ To start over press RESET to display **00:00:00** again.

When the timer reaches the preset value, it will sound the audible alarm for 2 seconds and hold the time count.

During an UP count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired.

Setting the Down Counter Preset Time

If you are using the clock as a DOWN counting elapsed timer, you will need to set a preset time to count DOWN from. In this mode, the alarm and hold will occur at 00:00:00.

- ❶ Set the UP/DOWN/CLOCK switch to the DOWN position.
- ❷ Set the SET/RUN switch to the SET position. The hours digits will be flashing.
- ❸ Using the INCREMENT switch, set the desired hours for the preset time, then press ENTER. The minutes digits will now be flashing.
- ❹ Using the INCREMENT switch, set the desired minutes for the preset time, then press ENTER. The seconds digits will then be flashing.
- ❺ Using the INCREMENT switch, set the desired seconds for the preset time, then press ENTER. The display will then flash **donE**.
- ❻ Set the SET/RUN switch back to the RUN position.

Down Counter Elapsed Time Operation

Once the desired preset value has been set, the unit is now ready to function as a DOWN count elapsed timer.

- ❶ Set the UP/DOWN/CLOCK switch to the DOWN position.
- ❷ Be sure the SET/RUN switch is in the RUN position.
- ❸ Press RESET to display the preset value which was set previously.
- ❹ Press the START/STOP switch to begin counting down elapsed time.
- ❺ Press the START/STOP switch again to stop and hold the count.
- ❻ Press the START/STOP switch again to resume elapsed time counting.
- ❼ To start over press RESET to display the preset value again.

When the timer reaches 00:00:00, the timer will stop counting and the audible alarm will sound for 2 seconds.

During a DOWN count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired

Description

The Code Blue feature provides an override which forces the clock into a special count up elapsed time mode. No matter which of the three normal functions is being displayed, Code Blue input will cause the unit to begin counting elapsed time from 00:00:00. All other functions of the unit continue to operate in the background during a Code Blue.

Operation

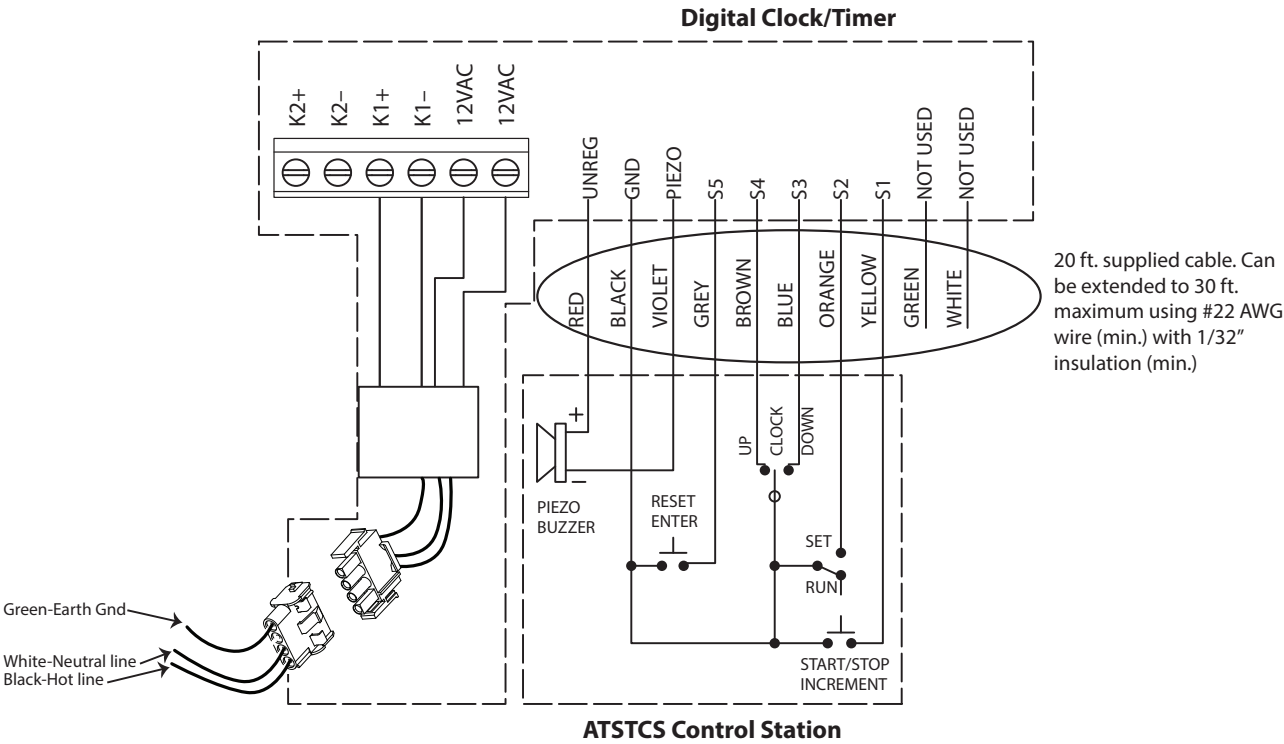
A Code Blue is initiated by applying a signal ranging from 12vac/vdc to 30vac/vdc to the K2+ and K2- terminals. See the sample wiring diagram below for more detail.

The Code Blue timer is the highest priority function of the clock/timer while in the run mode. No matter which of the 3 normal functions is being displayed, the Code Blue input will cause the clock to begin counting up elapsed time from 00:00:00.

The Code Blue timer can be stopped and the time held for viewing by pressing the START/STOP button on the ATSTCS switch panel. The Code Blue timer cannot be restarted from the switch panel.

To reset the clock back to normal operation, the RUN/SET switch must be set to the SET position momentarily and then returned to the RUN position.

All other functions of the clock continue to operate in the background during a Code Blue. Time of day and time corrections from the SiteSync IQ system controller will not be affected. The standard count up timer and the count down timer will continue as well. However, if one of these timers is switched on for display when a Code Blue occurs, that particular timer will be reset when the clock is reset back to normal operation.



Digital Clock/Timer Code Blue wiring using Control Station
The Control Station is connected as normal.

The ATSTCS **must be** in the RUN mode for Code Blue to override.

The 12vac/vdc to 30vac/vdc signal that starts the Code Blue timer originates from equipment external to the Digital Clock/Timer. The external equipment usually employs a switch device (i.e., a relay contact) to apply this signal. That switching device is often referred to as the Code Blue contact.

The Code Blue contact does not have to open before resetting the Digital Clock/Timer back to normal operation, but must be opened before another Code Blue can occur. The transition from no voltage to applied voltage (across the K2+ and K2- terminals) initiates a Code Blue.

If the Code Blue contact opens and closes again before the Digital Clock/Timer is reset back to normal operation, the Code Blue timer will start over from 00:00:00.

If a power failure occurs during a Code Blue and the back up battery is in place, and the Code Blue contact is still closed when the power returns, the Code Blue timer will start over from 00:00:00. If the Code Blue contact is open when the power returns, the Code Blue timer will continue counting the elapsed time including the time while the power was off.

If a power failure occurs during a Code Blue after the Code Blue timer has been stopped for viewing, and the Code Blue contact is still closed when the power returns, the Code Blue timer will start over from 00:00:00. If the Code Blue contact is open when the power returns, the elapsed time where the Code Blue timer was stopped prior to the power failure will be displayed.

Description

Installation

Operation

Code Blue

Maintenance

Appendix

Description

Cleaning

Occasionally the Digital Clock/Timer and the Control Station will need to be cleaned. Dampen a soft, nonabrasive cloth with alcohol or a mild detergent. **Do not use abrasives or solvents!** Gently wipe the exteriors of the units with the cloth.

Installation

Battery Maintenance

The Digital Clock/Timer uses a single 9vdc Ni-Cad battery rechargeable via an on board charger. This battery retains the time of day and timer counts when AC power is lost. If each in a series of AC power losses occur for a similar length of time, the battery can be conditioned to provide only that amount of backup capacity. This phenomenon is called “memory” effect. The Ni-Cad battery’s “memory” can be erased by deeply discharging the battery and recharging it.

It is recommended that the operator remove AC power from the Digital Clock/Timer once per year for at least four hours.

Operation

WARNING

Replace the battery only with a 9v Ni-Cad battery. Do not replace with a regular (primary) 9v transistor battery (i.e., zinc carbon battery, alkaline battery)! An incompatible battery may leak or explode, causing equipment damage and/or personal injury! If battery must be replaced, contact American Time at 800-328-8996.

Code Blue

System Maintenance

The Digital Clock/Timer and ATSTCS Control Station have been manufactured for years of dependable, reliable use. However, to assure the reliability of this product, it is recommended that the Digital Clock/Timer be tested at least every six (6) months with the Control Station and Code Blue contact for operation in accordance with wiring configurations used.

Maintenance

Appendix

Appendix 1
Operator's Flowchart

To Set Time	To Set UP Counter Preset	To Set DOWN Counter Preset
UP/CLOCK/DOWN switch in CLOCK position SET/RUN switch in SET position Clock display 24Hr or 12Hr Push INCREMENT to change Push ENTER Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE Place SET/RUN switch in RUN position	UP/CLOCK/DOWN switch in UP position SET/RUN switch in SET position Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE Place SET/RUN switch in RUN position	UP/CLOCK/DOWN switch in DOWN position SET/RUN switch in SET position Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE Place SET/RUN switch in RUN position
To Use as a Clock	To Use UP Counter	To Use DOWN Counter
Place SET/RUN switch in RUN position UP/CLOCK/DOWN switch in CLOCK position	UP/CLOCK/DOWN switch in UP position Place SET/RUN switch in RUN position Place RESET to display 00:00:00 Place START/STOP to Begin Place START/STOP to Hold Place START/STOP to begin again Alarm will sound when preset time is reached Press RESET to reset counter	UP/CLOCK/DOWN switch in DOWN position Place SET/RUN switch in RUN position Place RESET to display preset time Place START/STOP to Begin Place START/STOP to Hold Place START/STOP to begin again Alarm will sound 00:00:00 is reached Press RESET to reset counter

Code Blue Operation

SET/RUN switch **MUST** be in RUN position

To stop and hold code blue time for viewing, press **START/STOP**

To Reset Clock/Timer to Normal Operation

Place SET/RUN switch momentarily in **SET** position and return switch to **RUN** position

